

Study of Anti-fungal Effects of Soil-Borne *Streptomyces* sp. Isolated in Golestan Province

Hashemi M (MSc)

Phd student of Mycology, Islamic Azad
University Tonekabon Branch

Nasrollahi omran A (MSc)

Phd student of Mycology, Islamic Azad
University Tonekabon Branch

Pordeli HR (MSc)

Phd student of Mycology Islamic Azad
University, Gorgan Branch

Hosenian A (BSc)

MSc student of Microbiology Islamic Azad
University Tonekabon

Corresponding Author: Hoseinian, A

E-mail: azam_hoseiniyan72@yahoo.com

Abstract

Background and objectives: *Streptomyces* is the most important genus in Actinomycetes family. The Streptomycetes are widely used in industry and producing numerous chemical compounds including antibiotics, enzymes and anti-tumor agents. The aim of this study was to isolate soil-borne *Streptomyces* producing antimicrobial substances from soil of Golestan province of Iran and to survey anti-fungal metabolites produced by this organism.

Material and Methods: In this study, various soil samples were obtained from the depth of 6-10 centimeter in forest areas of Naharkhoran in Gorgan and Kordkuy's Derazno, Aghala's deserts and farming lands of Aliabad. The samples were cultured on Actinomycet isolation agar and Starch casein agar and then identified and purified by morphology and biochemistry tests. The activity of isolated *Streptomyces* against *Aspergillus flavus*, *Aspergillus*, *Candida albicans* and *Malasesia fur* were studied by Agar Diffusion method. For two isolates having the best anti-fungal effect was performed PCR by using 16RNA primer.

Results: of 120 samples, 24 are *Streptomyces* (20%). The frequency of *Streptomyces* is reported in Aghala (10,41.6%), Derzno (8,33.3%), Naharkhoran (4,16.6%) and Aliabad (2,8.3%). Of 24 isolated *Streptomyces*, two isolates have strong anti-fungal and six of them have moderate effect. We also see *Streptomyces*, isolated from desert area, have higher anti-fungal activity.

Conclusion: It is recommended two isolates of *Streptomyces* be identified and purified.

Key words: *Streptomyces*, antifungal agents, Anti-Bacterial Agents